



# KIPEPEO Butterfly Enterprise and the Mombasa Live Butterfly Exhibit:

Enhanced Sustainability of Arabuko-Sokoke Forest through improved natural resources management by and for the stakeholders

USAID/Kenya - Mamoocher Deghati



## The Kipepeo Project

The Kipepeo ("Butterfly") Project links conservation and development in a concrete and successful fashion. Located in Arabuko Sokoke Forest (ASF), in Malindi and Kilifi Districts, the project promotes positive attitudes toward conservation of the forest by creating income generating opportunities from forest butterflies.

Kipepeo Project staff train farmers on how to rear butterflies using parental butterfly stock from the forest and forest food-plants for the caterpillars. Staff collects the pupae from the farmers, and exports them to butterfly museums and exhibits in the United States and Europe. Other community products marketed by Kipepeo include honey and mushrooms.

The Mombasa Live Butterfly exhibit will be a new market for surplus pupae and other products from Kipepeo and other coastal forest communities. It will also showcase the richness of Kenya's coastal forests and biodiversity and the need to conserve them.

## Background

The Arabuko forest is the last large remnant of the north-coast forests that once dominated Kenya's coastline. A vital resource for the local communities, it also forms part of the Eastern African Coastal Forest System, considered among the top 25 biodiversity hot spots on earth.

The forest is home to globally threatened bird species. The Sokoke Scops Owl and Clarke's Weaver are each known only from ASF and one other site, the East Usambara Mountains in Tanzania. ASF also shelters several other endemic fauna, such as the coastal endemic Bunty's toad; three rare mammals (Ader's Duiker, Golden-rumped elephant shrew and the Sokoke bushy-tailed mongoose); and the forest endemic Charaxes blanda butterfly among others.

The forest however faces severe threat from unsustainable use by economically marginal communities trying to meet their basic needs.

## USAID/Kenya Support

USAID supports the Kipepeo Project. In 2003, USAID awarded US\$1.2 million through Nature Kenya and the National Museums of Kenya (NMK) to support the implementation of Kenya's first pilot forest co-management initiative at the Arabuko Sokoke forest before the enactment of the Forest Act (2005).

The grant also aimed to establish sustainable nature-based businesses to create incentives for forest conservation and help reduce forest loss. As part of that grant, Kipepeo received partial support which helped to expand its processing facilities, diversify its enterprises beyond butterfly farming to include honey production, promoted improved beekeeping among farmers around the forest, installed modern honey processing equipment and established new export markets for its butterfly pupae including a website for marketing its products and raising awareness on conservation.

### Contact Information

Erna Kerst	Azharul Mazumder
Mission	Director
Director	Agriculture Business and Environment Office

USAID/Kenya  
P.O. Box 629  
00621, Nairobi  
Kenya: Tel: 254-20-862-2000

## Achievements

**Income:** The Kipepeo Project has over the past five years grossed \$80,000 annually, of which 90% is from the export of butterfly pupae to the United States and Europe. The remaining 10% comes from the sale of high-quality honey to tourist hotels around Malindi. Women comprise over 80% of Kipepeo farmers, meaning that much of the income is directly spent within the family household.

**Forest restoration:** Because butterflies require plants for food and survival, Kipepeo farmers have established tree nurseries and planted trees on their farms for breeding the pupae. Many of the Kipepeo farmers are also members of Community Forest Associations, helping to protect and conserve the Arabuko forest.

**Community awareness.** The project has helped change attitudes among both butterfly farmers and decision-makers. In 1999, an independent project evaluation revealed that since project inception in 1993, the percentage of farmers reporting that the forest was 'useful to them' rose from 48 percent to 83 percent. Over the same period, respondents' desires to destroy the forest in favour of agricultural expansion dropped from 83 percent to 16 percent.

**Broader publicity:** The project has been widely publicized, raising awareness among a wide circle of decision-makers that economic benefits can be generated from conservation. An outcome of this 'higher-level' awareness was the then Forest Department's (now Kenya Forest Service) approval of the introduction of the first pilot co-management program at Arabuko Sokoke forest, funded by USAID even before the Forest Act was enacted in 2005.

## Challenges and Next Steps

### Enlarging the market

Over the years, increasing numbers of farmers have been attracted to the project, and the quality of their pupae has improved. The number of international clients for Kipepeo butterflies has risen from 1 in 1994 to a

maximum of 13 in some years. These represent a fairly reliable though static market that can absorb less than one-half the export quality pupae produced by farmers.

In any one year, Kipepeo farmers produce 120,000 high quality pupae, but the international buyers absorb about 50,000 (40%). To date, the 'excess' pupae are not purchased by Kipepeo, and this has resulted in considerable loss of revenue to the butterfly farmers. The export trade is also vulnerable to exchange rate fluctuations and international trade restrictions. These include the recent suspension by major couriers such as DHL of parcel transportation of live products including pupae, which has increased shipment costs exponentially.

### Role of the Fort Jesus Museum exhibit

The live butterfly exhibit to be constructed with USAID support at the Fort Jesus Museum is expected to purchase some of the excess pupae produced by Arabuko and other coastal forest farmers. The exhibit represents for the first time a secure and reliable local demand. The feasibility study and business plan for the exhibit projects an annual gross revenue of \$20,000 in the third year of operation for butterfly products alone. In addition, the exhibit gift shop will market a whole range of conservation linked community products from all over the region.

The opportunity presented by the exhibit to showcase the biodiversity of Coastal forests is no less important. A notable feature of coastal forests and other natural sites is their close association with cultural and spiritual values. An obvious case is the Mijikenda Kaya forests which are now listed as UNESCO World Heritage sites. The Swahili community have lived in association with coastal forests for hundreds of years and developed a variety of material and cultural uses and values in relation to their natural environment. The exhibit will underline the crucial links between the coastal biodiversity and equally diverse and rich cultures.